

A new subspecies of *Isotropis cuneifolia* (Fabaceae)

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Abstract

Keighery, G.J. A new subspecies of *Isotropis cuneifolia* (Fabaceae). *Nuytsia* 13(3): 471–474 (2001). *Isotropis cuneifolia* subspecies *glabra* Keighery is described and illustrated. The subspecies is considered endangered, being confined to a small area around Gingin on the Swan Coastal Plain, Western Australia.

Introduction

During intensive floristic and reserve surveys of the Swan Coastal Plain (Gibson *et al.* 1994) it became apparent that a number of taxa present in the area required taxonomic study. This is the third in a series of papers investigating these problems. The first dealt with a new subspecies of *Lambertia echinata* (Keighery 1997) and the second with *Diplopeltis huegelii* (Keighery 1998).

The genus *Isotropis* Benth. (Fabaceae) is well known as the only other group of native legumes producing the poisonous alkaloides, apart from the genus *Gastrolobium* R. Br. The most widespread, and variable member of the genus in southern Western Australia is *Isotropis cuneifolia* (Sm.) B.D. Jacks. (Common Lamb Poison). This species contains populations that are n=6, 12 and 18 and very distinctive morphological races that are currently under study (Keighery unpub. obs.). Gardner & Bennetts (1956) distinguished three different “forma” in their treatment of *Isotropis cuneifolia*. However, these were not formally named according to the International Botanical Code, and have not been used or referred to in the taxonomic literature subsequently. Their “forma *lineata*” ms. was the only one tested experimentally, and proved toxic to sheep.

During surveys of the remnant vegetation of the eastern side of the Swan Coastal Plain, a very distinctive race of *Isotropis cuneifolia* was recorded in *Casuarina obesa* and *Eucalyptus rudis* woodland (Gibson *et al.* 1994). This taxon corresponds with “forma *lineata*”. The author concurs with Gardner & Bennetts (1956) that this is a distinctive taxon that deserves taxonomic recognition.

It is being named to facilitate its listing as a species of conservation interest, as it is confined to a few small remnants. The biology and taxonomy of the rest of the Western Australian members of the genus *Isotropis* is under study.

Taxonomic treatment

***Isotropis cuneifolia* subsp. *glabra* Keighery, subsp. nov.**

Differt a *Isotropis cuneifolia* subsp. *cuneifolia* foliis et ramulis omnino glabris.

Typus: Gingin business road, 6 km south of Gingin, Western Australia, 16 September 1987, G.J. Keighery 9242 (*holo*: PERTH 02869365; *iso*: CANB).

A clonal soft-wooded *shrub*, to 20 cm tall and 2 m across, dying back to the underground stem in summer, and resprouting in winter. *Stem* above ground 2–3 mm wide, glabrous, basal third tinged red, upper shining green. *Basal leaves* sessile (or gradually tapering into a petiole), trident-shaped, distinctly 2-lobed when mature, 76–88 mm long, 8–9 mm across sinus, green, shining, glabrous. *Stipules* 17–23 mm long, green, glabrous. *Pedicels* 80–98 mm long, glabrous. *Bracteoles* immediately below calyx, linear, brown. *Calyx* brown, glabrous, lobes 11–13 mm long, lower lobes obovate-acute, upper lobes two-lobed. *Standard* 26–28 mm wide, eye yellow, surrounded by a red corona then yellow around margins, reverse red. *Wings* 14–17 mm long, red. *Keel* red to almost black. *Ovary* green, densely hairy. *Legume* recurved, cylindrical, 23–30 mm long, narrowed at base into a stipe 5–8 mm long, brown, with scattered appressed hairs. *Seeds* reniform, c. 1 mm wide, brown, surface with an open reticulate pattern. (Figure 1)

Specimens examined. WESTERN AUSTRALIA: Gingin, W.E. Blackall 2962 (PERTH); Gingin, 29 Aug. 1924, Carne & Gardner s.n. (PERTH); 45 mile peg [72 km] on Gingin road, H. Demarz 3928 (PERTH, KPBG); Cowalla Rd, 8 miles [13 km] N of Gingin to Guilderton road, 8 Dec. 1965, A.S. George s.n. (PERTH); Yurine Swamp Nature Reserve, G.J. Keighery 14976 (PERTH); E of Lake Bambun Reserve, 20 Nov. 1991, B.J. Keighery s.n. (PERTH).

Distribution and habitat. Known from the eastern side of the Swan Coastal Plain, extending about 20 km north and south of Gingin, which is 80 km north of Perth. Grows under *Casuarina obesa* or *Eucalyptus rudis* low woodland on winter-wet flats, usually in red clay or ironstone or sandy clay over ironstone. Like other members of this species, plants die down to a persistent rootstock over summer. New stems are produced after the first rains in autumn or winter.

Flowering period. August to October.

Conservation status. CALM Conservation Codes for Western Australian Flora: Priority Two. One small population is known within a conservation reserve. Other populations are also small.

Notes. This subspecies differs from all other variants of *Isotropis cuneifolia* in being completely glabrous, and in the long, thin shining green leaves. It is separated ecologically from the typical subspecies which grows on well drained sites on the Swan Coastal Plain and adjacent Darling Range. There are three other potential subspecific taxa in the species, occurring between Geraldton and Shark Bay, in the southern wheatbelt and along the south coast.



Figure 1. Flowering branchlet of *Isotropis cuneifolia* subsp. *glabra*. Scale bar = 20 mm. Drawn from G.J. Keighery 14976 (PERTH).

References

- Gardner, C.A.G. & Bennetts, H.W. (1956). "The Toxic Plants of Western Australia." (Western Australian Newspapers Ltd: Perth.)
- Gibson, N., Keighery, B.J., Keighery, G.J., Burbidge, A.H. & Lyons, M.N. (1994). A Floristic Survey of the southern Swan Coastal Plain. Unpublished Report for the Australian Heritage Commission.
- Keighery, G.J. (1997). A new subspecies of *Lambertia echinata* (Proteaceae). *Nuytsia* 11: 283–284.
- Keighery, G.J. (1998). Taxonomy of *Diplopeltis huegelii* (Sapindaceae). *Nuytsia* 12: 289–291.